10/003,183 (partial listing)

Terms used **edge oriented compression** or **coding** Found **20,521** of **145,519**

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1 Second-generation image coding: an overview

M. M. Reid, R. J. Millar, N. D. Black

March 1997 **ACM Computing Surveys (CSUR)**, Volume 29 Issue 1

Full text available: pdf(12.23 MB) Additional Information: full citation, abstract, references, index terms, review

This article gives an overview of a diverse selection of currently used second-generation image coding techniques. These techniques have been grouped into similar categories in order to allow a direct comparison among the varying methods. An attempt has been made, where possible, to expand upon and clarify the details given by the original authors. The relative merits ans shortcomings of each of the techniques are compared and contrasted.

Keywords: MRi, compression, image coding

2 Progressive geometry compression

Andrei Khodakovsky, Peter Schröder, Wim Sweldens

July 2000 **Proceedings of the 27th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(7.41 MB) Additional Information: full citation, abstract, citings, index terms

We propose a new progressive compression scheme for arbitrary topology, highly detailed and densely sampled meshes arising from geometry scanning. We observe that meshes consist of three distinct components: geometry, parameter, and connectivity information. The latter two do not contribute to the reduction of error in a compression setting. Using semi-regular meshes, parameter and connectivity information can be virtually eliminated. Coupled with semi-regular wavelet transforms, zerotree c ...

Keywords: compression algorithms, hierarchical representations, semi-regular meshes, signal processing, subdivision surfaces, wavelets, zerotree coding

3 Progressive compression for lossless transmission of triangle meshes

Pierre Alliez, Mathieu Desbrun

August 2001 **Proceedings of the 28th annual conference on Computer graphics and interactive techniques**

Full text available: pdf(10.06 MB) Additional Information: full citation, abstract, references, citings, index terms

Lossless transmission of 3D meshes is a very challenging and timely problem for many applications, ranging from collaborative design to engineering. Additionally, frequent delays in transmissions call for progressive transmission in order for the end user to receive useful successive refinements of the final mesh. In this paper, we present a novel, fully progressive encoding approach for lossless transmission of triangle meshes with a very fine granularity. A new valence-driven decimating con ...

Keywords: connectivity encoding, geometry encoding, levels of details, mesh decimation, progressive transmission, triangle mesh compression

4 Tetrahedral mesh compression with the cut-border machine

Stefan Gumhold, Stefan Guthe, Wolfgang Straßer
October 1999 **Proceedings of the conference on Visualization '99: celebrating ten years**

Full text available: pdf(2.55 MB) Additional Information: full citation, abstract, references, citings, index terms

In recent years, substantial progress has been achieved in the area of volume visualization on irregular grids, which is mainly based on tetrahedral meshes. Even moderately fine tetrahedral meshes consume several mega-bytes of storage. For archivation and transmission compression algorithms are essential. In scientific applications lossless compression schemes are of primary interest. This paper introduces a new lossless compression scheme for the connectivity of tetrahedral meshes. Our tec ...

Keywords: compression algorithms, scientific visualization, solid modeling, volume rendering

5 Session P16: isosurfaces: BLIC: bi-level isosurface compression

Gabriel Taubin
October 2002 **Proceedings of the conference on Visualization '02**

Full text available: pdf(561.66 KB) Additional Information: full citation, abstract, references, citings, index terms

In this paper we introduce a new and simple algorithm to compress isosurface data. This is the data extracted by isosurface algorithms from scalar functions defined on volume grids, and used to generate polygon meshes or alternative representations. In this algorithm the mesh connectivity and a substantial proportion of the geometric information are encoded to a fraction of a bit per Marching Cubes vertex with a context based arithmetic coder closely related to the JBIG binary image compression ...

Keywords: 3D geometry compression, algorithms, graphics

6 Progressive lossless compression of arbitrary simplicial complexes

Pierre-Marie Gandoin, Olivier Devillers
July 2002 **ACM Transactions on Graphics (TOG) , Proceedings of the 29th annual conference on Computer graphics and interactive techniques**, Volume 21 Issue 3

Full text available: pdf(8.88 MB) Additional Information: full citation, abstract, references, citings, index terms

Efficient algorithms for compressing geometric data have been widely developed in the recent years, but they are mainly designed for closed polyhedral surfaces which are *manifold* or "nearly manifold". We propose here a *progressive* geometry compression scheme which can handle manifold models as well as "triangle soups" and 3D tetrahedral meshes. The method is lossless when the decompression is complete which is extremely important in some domains such as medical or finite element.Wh ...

Keywords: coding, interactivity, mesh compression, non manifold meshes, progressivity

7 Geometric compression through topological surgery

Gabriel Taubin, Jarek Rossignac

April 1998 **ACM Transactions on Graphics (TOG)**, Volume 17 Issue 2

Full text available: pdf(8.66 MB) Additional Information: full citation, abstract, references, citings, index terms

The abundance and importance of complex 3-D data bases in major industry segments, the affordability of interactive 3-D rendering for office and consumer use, and the exploitation of the Internet to distribute and share 3-D data have intensified the need for an effective 3-D geometric compression technique that would significantly reduce the time required to transmit 3-D models over digital communication channels, and the amount of memory or disk space required to store the models. Because ...

Keywords: 3D mesh compression, VRML, geometry compression

8 Linear-time compression of bounded-genus graphs into information-theoretically optimal number of bits

Hsueh-I Lu

January 2002 **Proceedings of the thirteenth annual ACM-SIAM symposium on Discrete algorithms**

Full text available: pdf(217.75 KB) Additional Information: full citation, abstract, references, citings

This extended abstract summarizes a new result for the *graph compression* problem, addressing how to *compress* a graph *G* into a binary string *Z* with the requirement that *Z* can be *decoded* to recover *G*. Graph compression finds important applications in 3D model compression of Computer Graphics [12, 17-20] and compact routing table of Computer Networks [7]. For brevity, let a ¦Ð-*graph* stand for a graph with property ¦ ...

9 Session P12: meshes: Efficient compression and rendering of multi-resolution meshes

Zachi Karni, Alexander Bogomjakov, Craig Gotsman

October 2002 **Proceedings of the conference on Visualization '02**

Full text available: pdf(3.02 MB) Additional Information: full citation, abstract, references, citings

We present a method to code the multiresolution structure of a 3D triangle mesh in a manner that allows progressive decoding and efficient rendering at a client machine. The code is based on a special ordering of the mesh vertices which has good locality and continuity properties, inducing a natural multiresolution structure. This ordering also incorporates information allowing efficient rendering of the mesh at all resolutions using the contemporary vertex buffer mechanism. The performance of o ...

Keywords: geometry coding, progressive compression, rendering, wavelets

10 Poster Session: Edgebreaker: a simple compression for surfaces with handles

Hélio Lopes, Geovan Tavares, Jarek Rossignac, Andrzej Szymczak, Alla Safanova

June 2002 **Proceedings of the seventh ACM symposium on Solid modeling and applications**

Full text available: pdf(561.19 KB) Additional Information: full citation, abstract, references, citings, index terms

The Edgebreaker is an efficient scheme for compressing triangulated surfaces. A surprisingly simple implementation of Edgebreaker has been proposed for surfaces

10/003,113 (initial)

	Type	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Errors
1	BRS	2677	(encod$3 cod$3 compress$3) with (edge near3 (detect$3 extract$3))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 14:39			0
2	BRS	18292	(encod$3 cod$3 compress$3) near3 (edge)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 14:42			0
3	BRS	6336	(extract$3) near3 (edge)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 14:41			0
4	BRS	277	((encod$3 cod$3 compress$3) near3 (edge)) and ((extract$3) near3 (edge))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 14:41			0
5	BRS	658	(encod$3 cod$3 compress$3) with (smooth$3 near3 image)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 14:44			0
6	BRS	24243	smooth$3 near3 edge	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 14:44			0
7	BRS	11	(((encod$3 cod$3 compress$3) near3 (edge)) and ((extract$3) near3 (edge))) and ((encod$3 cod$3 compress$3) with (smooth$3 near3 image))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 15:09			0
8	BRS	17	(edge$1smooth$3 edge$1sharp$3) near3 image	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 15:27			0
9	BRS	3	edge$1smooth$3 adj1 image	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 15:35			0
10	BRS	16	edge$1smooth$3 with image	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 15:35			0
11	BRS	16	(edge$1smooth$3 with image) and @ad<20011207	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:10			0
12	BRS	286	(smooth$3 with (edge adj1 (pixel point)))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:09			0
13	BRS	51	(smooth$3 near3 (edge adj1 (pixel)))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:34			0

	Type	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Errors
14	BRS	13	((smooth$3 near3 (edge adj1 (pixel)))) with (adjacent neighbor$3 proximity)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:33			0
15	BRS	8	(((smooth$3 near3 (edge adj1 (pixel)))) with (adjacent neighbor$3 proximity)) and @ad<20011207	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:39			0
16	BRS	3	(smooth$3 with (pixel adj3 (adjacent near "close to" "next to" neighbor$4) adj3 edge))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:38			0
17	BRS	108	(edge with (distance near3 (map conversion)))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:39			0
18	BRS	26	(edge with (distance adj1 (map conversion)))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:39			0
19	BRS	23	((edge with (distance adj1 (map conversion)))) and @ad<20011207	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:43			0
20	BRS	8	(((edge with (distance adj1 (map conversion)))) and @ad<20011207) and smooth$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/03 16:43			0
21	BRS	4	(image same (sharpen$3 with smooth$3 with (inverse revers$3)))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 12:18			0
22	BRS	3581	(filter$3 mask) with (weight$3 near3 (sum average))	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 12:19			0
23	BRS	885	(filter$3 mask) with (weight$3 adj1 sum)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 12:20			0
24	BRS	2	(edge near3 smooth$3) with (weighted adj1 sum)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 12:26			0
25	BRS	87	(smooth$3) with (weighted adj1 sum)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 12:27			0
26	BRS	17	(smooth$3) with (weighted adj1 sum) with (filter mask)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 14:45			0

	Type	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Errors
27	BRS	0	least$1square with steepest$1descent	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 14:45			0
28	BRS	0	least$1square same steepest$1descent	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 15:35			0
29	BRS	112	steepest$1descent	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 14:46			0
30	BRS	1162	least$1square	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 14:46			0
31	BRS	1	steepest$1descent and least$1square	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 14:46			0
32	BRS	13	minimiz$5 with steepest$1descent	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 15:37			0
33	BRS	23	square$2 with steepest$1descent	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 15:53			0
34	BRS	21	(square$2 with steepest$1descent) and @ad<20011206	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 15:54			0
35	BRS	19	iterative$2 with steepest$1descent	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 16:40			0
36	BRS	19	(iterative$2 with steepest$1descent) and @ad<20011206	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 16:41			0
37	BRS	136	iterative$2 with minimiz$5 with gradient	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 16:41			0
38	BRS	39	(iterative$2 with minimiz$5 with gradient) same square	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 16:41			0
39	BRS	34	((iterative$2 with minimiz$5 with gradient) same square) and @ad<20011206	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/04 16:41			0

	Type	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Errors
40	BRS	1049	(correct$3 adjust$4 (noise near3 remov$3)) adj5 (edge near3 detect$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 11:50			0
41	BRS	54	((noise near3 remov$3)) adj5 (edge adj1 detect$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 11:50			0
42	BRS	35	((noise adj1 remov$3)) adj5 (edge adj1 detect$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 11:50			0
43	BRS	11	((noise adj1 remov$3)) adj5 (edge near3 smooth$3)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 12:18			0
44	BRS	2	mean$1filter$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 12:32			0
45	BRS	12	(mean near3 preserv$3) with filter$3	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 13:11			0
46	BRS	332	(distance near3 (map conver$4)) with edge	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 13:12			0
47	BRS	40	(distance adj1 (map conver$4)) with edge	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 13:13			0
48	BRS	36	((distance adj1 (map conver$4)) with edge) and @ad<20011206	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 13:13			0
49	BRS	6778	382/166,190,199,232,233,243,254,263,264,266,275.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 15:44			0
50	BRS	1436	348/384.1;358/426.01;375/240;708/203.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/11/05 15:45			0

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1 **A probabilistic image model for smoothing and compression**
Li, C.H.; Yuen, P.C.; Tam, P.K.S.;
Information Technology: Coding and Computing, 2000. Proceedings. International Conference on , 27-29 March 2000
Pages:36 - 41

[Abstract] [PDF Full-Text (96 KB)] **IEEE CNF**

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Xue, X.;
Data Compression Conference, 1999. Proceedings. DCC '99 , 29-31 March 1999
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[Abstract] [PDF Full-Text (216 KB)] **IEEE CNF**

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3 **Use of diffusion techniques for edge preservation for fractal coders**
Bruner, N.; Yarlagadda, R.;
Image Analysis and Interpretation, 1998 IEEE Southwest Symposium on , 5-7 April 1998
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Bruner, N.; Yarlagadda, R.;
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5 **Case study: an empirical investigation of thumbnail image recognition**
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Information Visualization, 1995. Proceedings. , 30-31 Oct. 1995
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Lee, J.H.; Liu, H.T.;
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[Abstract] [PDF Full-Text (184 KB)] **IEE CNF**

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Itoh, Y.;
Circuits and Systems for Video Technology, IEEE Transactions on , Volume: 6 , Issue: 2 , April 1996
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[Abstract] [PDF Full-Text (1464 KB)] **IEEE JNL**

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Mi-Hyun Kim; Kwang-Hoon Sohn;
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[Abstract] [PDF Full-Text (520 KB)] IEEE JNL

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[Abstract] [PDF Full-Text (596 KB)] IEEE JNL

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Circuits and Systems for Video Technology, IEEE Transactions on , Volume: 10 , Issue: 1 , Feb. 2000
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[Abstract] [PDF Full-Text (344 KB)] IEEE JNL

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11 **A low bit rate hybrid coding scheme for progressive image transmission**
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Pages:226 - 234

[Abstract] [PDF Full-Text (1320 KB)] IEEE JNL

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12 **A fast adaptive image restoration filter for reducing block artifact in compressed images**
Yoo Chan Choung; Joon Ki Paik;
Consumer Electronics, IEEE Transactions on , Volume: 43 , Issue: 4 , Nov. 1997
Pages:1340 - 1346